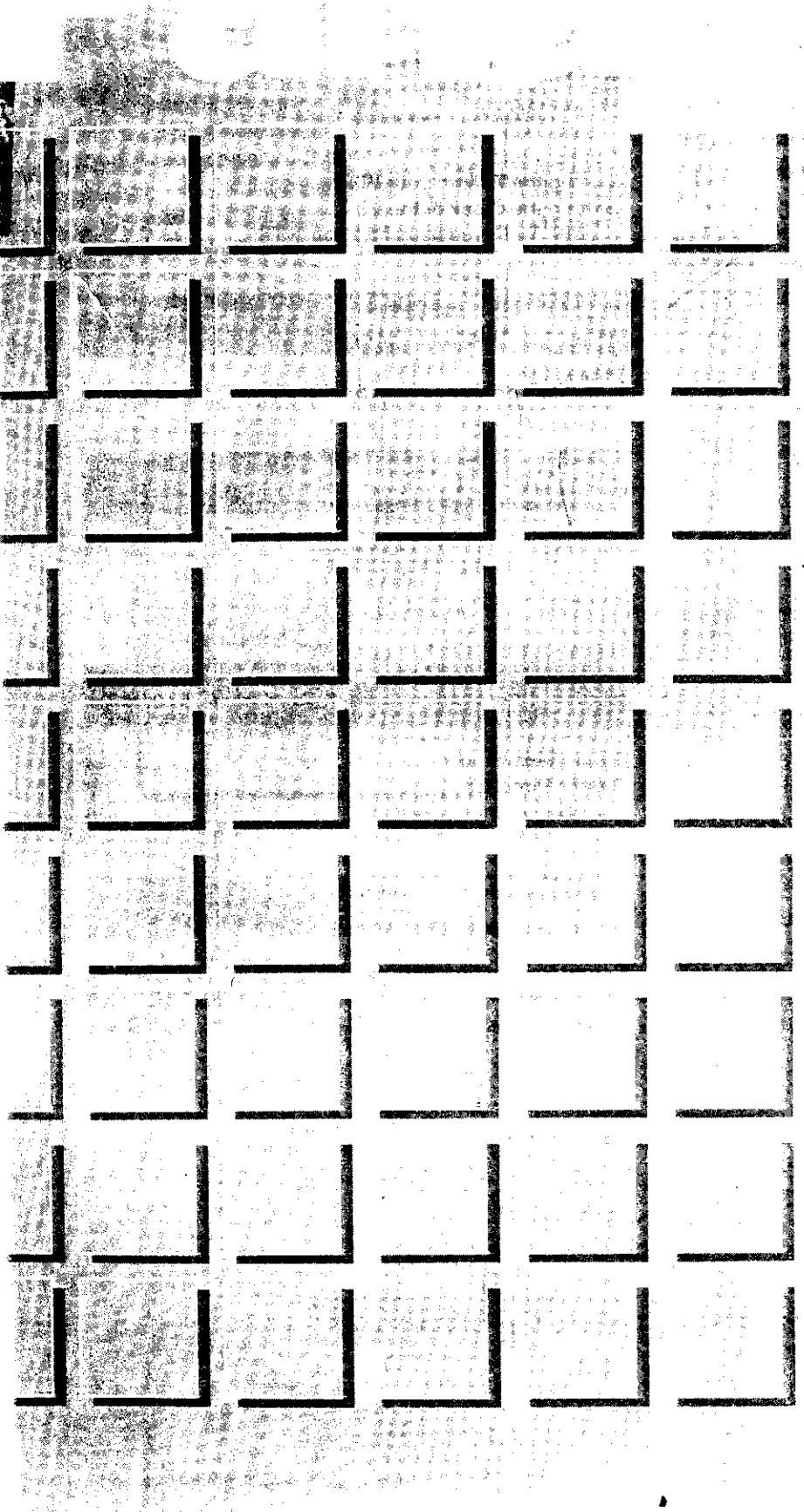


Operating Instructions

Video Cassette Recorder

NV-SD1 Series

VHS PAL SUPER DRIVE SYSTEM

Before attempting to connect, operate or adjust this product, please read these instructions and then retain them for future reference.

VQT5534

Dear Customer

We take this opportunity to thank you for purchasing this Panasonic Video Cassette Recorder.

We particularly advise that you carefully study these Operating Instructions before attempting to operate the unit and that you note the listed precautions.

Information for Your Safety

IMPORTANT
Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

NV-SD1A: Australian model
NV-SD1EA: New Zealand model

FOR YOUR SAFETY

■ **DO NOT REMOVE OUTER COVER.**
To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

HQ (High Quality) Picture System

Video recorders carrying the HQ symbol mark feature the new VHS High Quality Picture System. This system assures complete compatibility with VTRs that use the conventional VHS system.

Contents

Setting Up

Connections 3
Tuning the TV into your VTR 4
Setting the Clock of the VTR 5
Storing TV Broadcasts into your VTR 6

Description

Controls and Connection Sockets 8

Basic Operations

Playback 10
On-the-spot Recording 12
•Assembly Editing 13

Advanced Operations

Timer Recording 14
Search Function 16
•VHS Index Search System 16

Helpful Hints

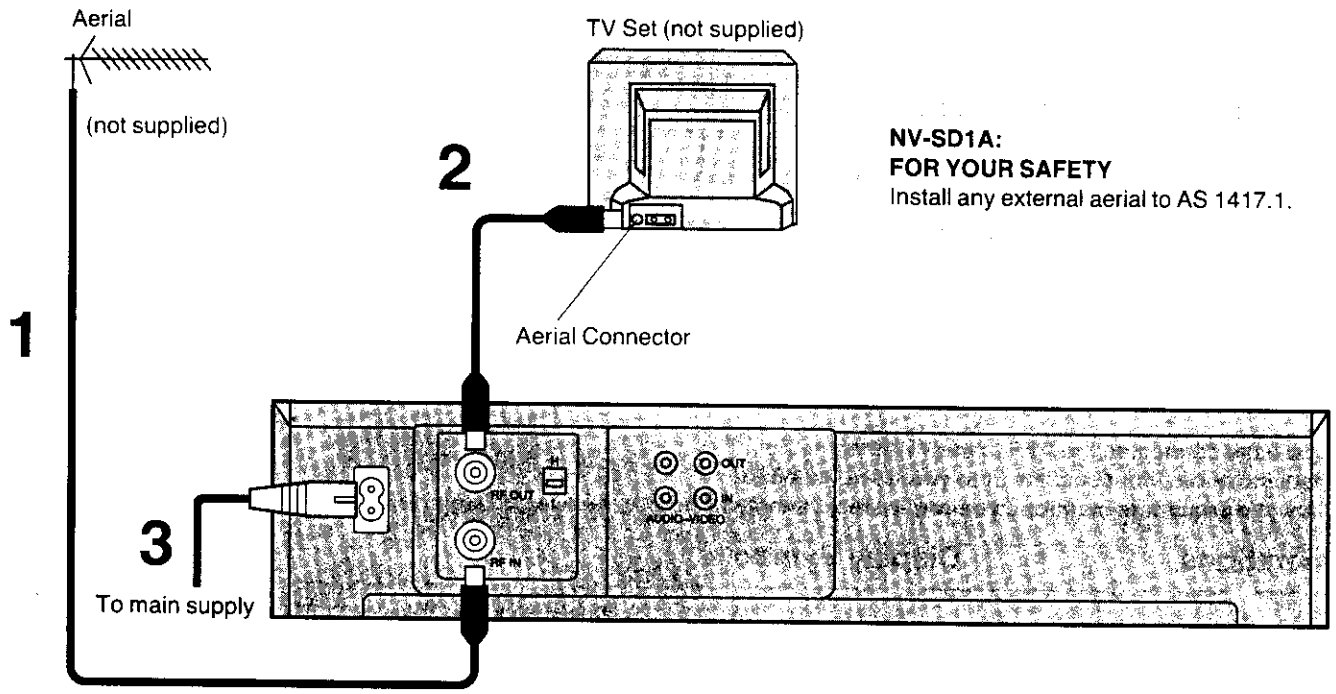
Before Requesting Service 17
Precautions 19
Specifications ..... Back Cover

Connections

This tells you how to connect the VTR to an aerial, TV, etc.

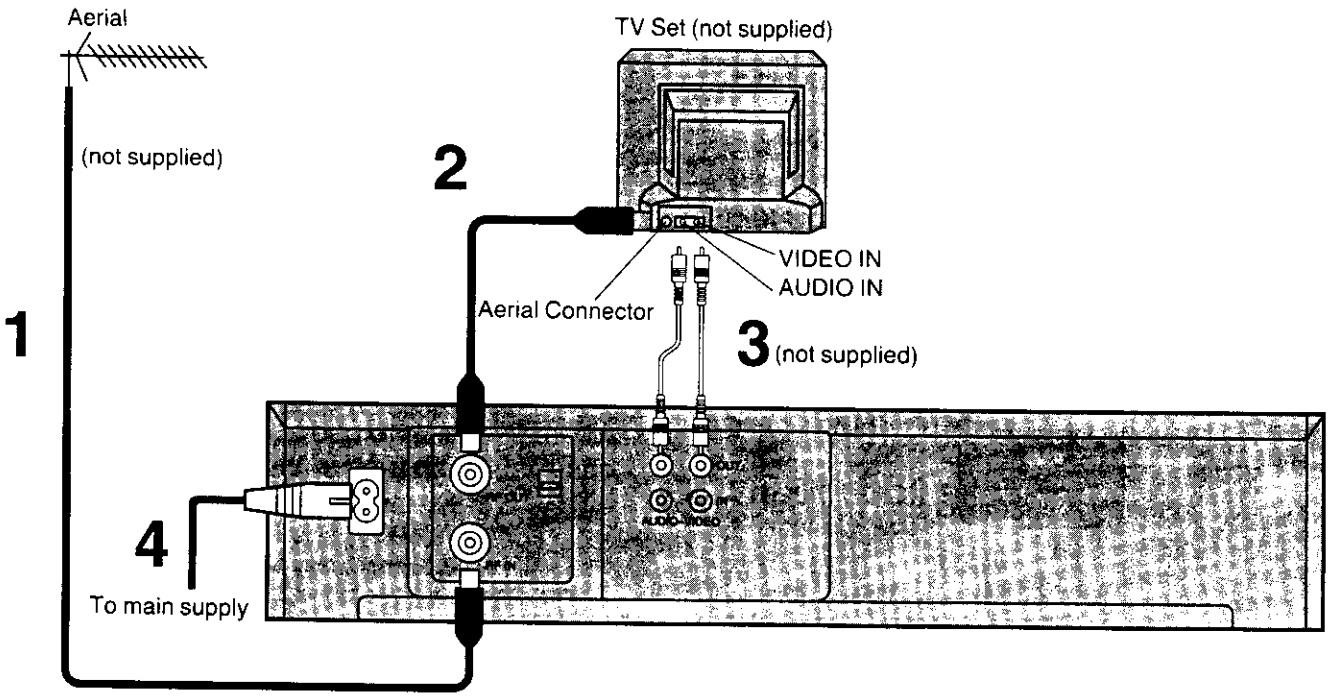
Basic Connections

The following connections are required to record and play back the VTR through a TV set:

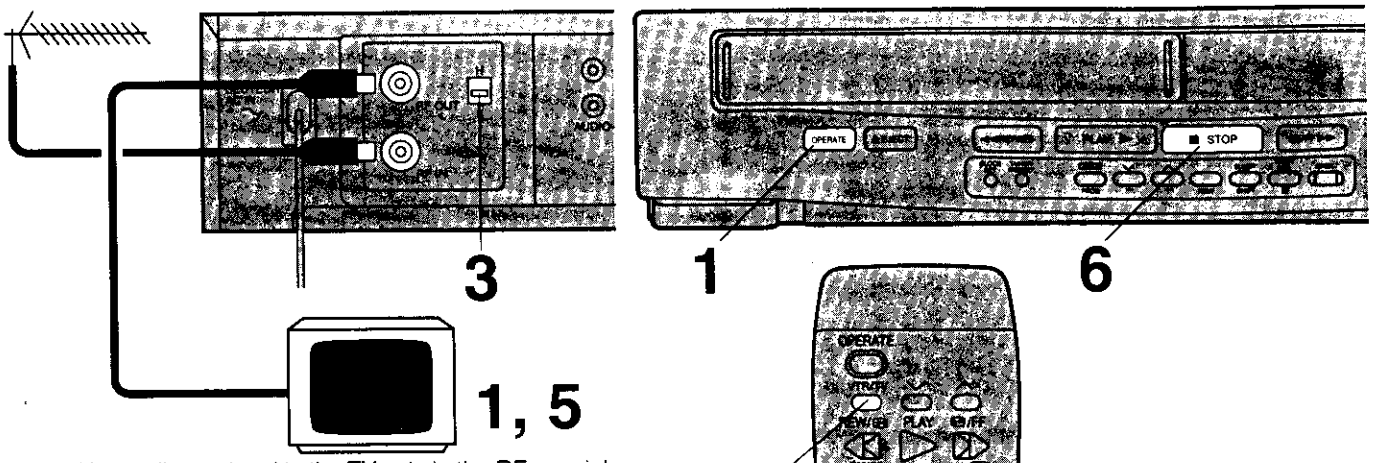


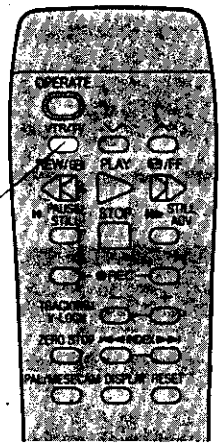
NV-SD1A:
FOR YOUR SAFETY
Install any external aerial to AS 1417.1.

Connection to a TV Set equipped with Audio/Video Input Sockets



Tuning the TV into your VTR

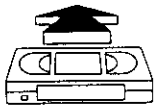




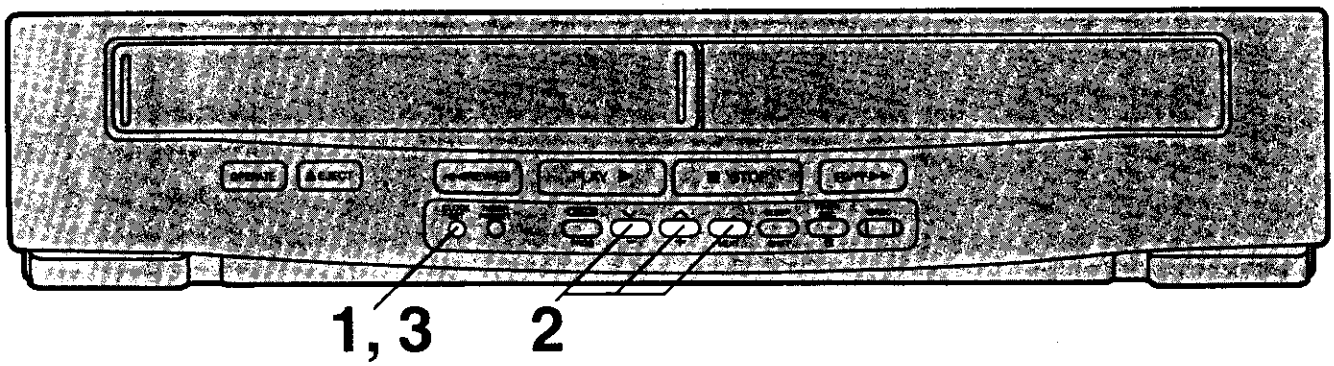
The VTR supplies a signal to the TV set via the RF coaxial cable.
For Australia: on channel 0 or 1
For New Zealand: on channel 2 or 3

It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.

If you have connected the VTR to the TV through the video and audio input sockets then you do not need to follow the procedure mentioned below. Instead, simply select AV mode on the television.

Operations	Display Symbols	
1	OPERATE	Turn on the TV and VTR.
2	VTR/TV VTR	Select the VTR mode.
3	H L	Select the video playback channel which is not occupied with any TV station. NV-SD1A: L (channel 0) or H (channel 1) NV-SD1EA: L (channel 2) or H (channel 3)
4		Insert a recorded cassette tape. ●To start the playback, see page 10.
5		Select a programme number on the TV set which you wish to use as the video viewing channel. Then tune in the TV to the picture from the cassette tape currently playing. ●NV-SD1A only In some areas channel 0 may be used by local TV station. In this case switch to channel 1.
6	■ STOP	Stop the playback.

Setting the Clock of the VTR



The built-in clock is used to activate the timer for automatic recording and must be set to the correct time.

The built-in digital clock employs the 24-hour system.

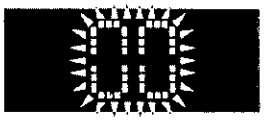
Preparation

Turn on the VTR.

Note:
The clock operates for at least 5 minutes by its backup system in the event of power failure.

For Example:

Date; 16th, October, 1999
Time; 20:15

Operations	Display Symbols	
1 CLOCK SET		Keep **CLOCK SET** pressed for more than 2 seconds.
2 Set each item by pressing + or − and **NEXT**.		
− +		Set **Year** "99".
		Set **Month** "10".
⬇		Set **Date** "16".
		Set **Hour** "20".
NEXT		Set **Minute** "15". •There is no need to press **NEXT**.
3 CLOCK SET		Press **CLOCK SET**. •The clock will start.

Time Reset Function

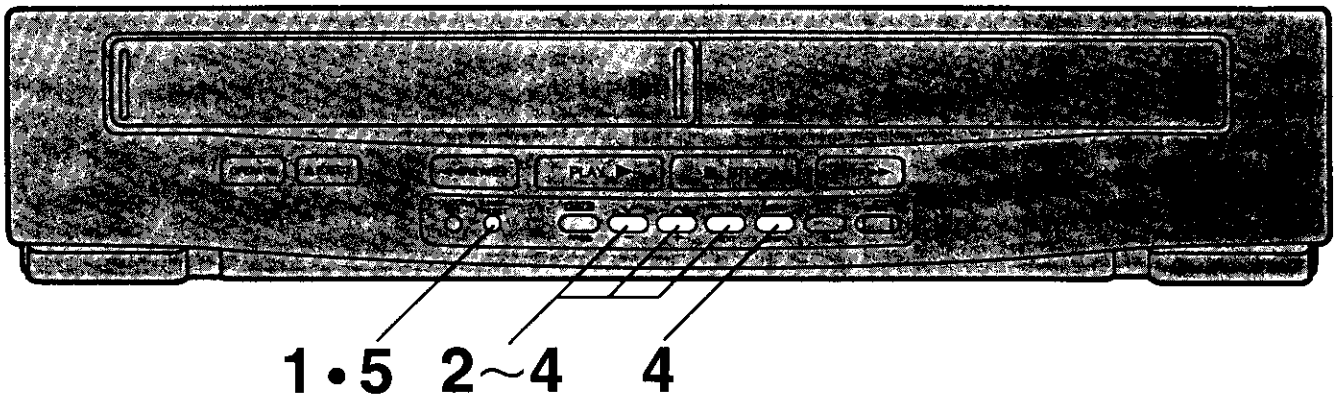
If the clock is less than two minutes slow or fast, it can easily be reset to the proper time.

For example: Resetting the clock to 12:00.00.

1 Keep **CLOCK SET** pressed at any time between 11:58.00 and 12:01.59 for more than 2 seconds.

2 Press **CLOCK SET** again as soon as you hear the 12:00.00 time signal.

Storing TV Broadcasts into your VTR

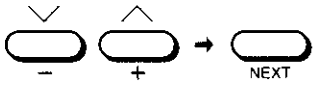
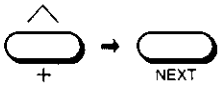
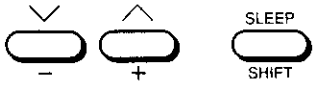


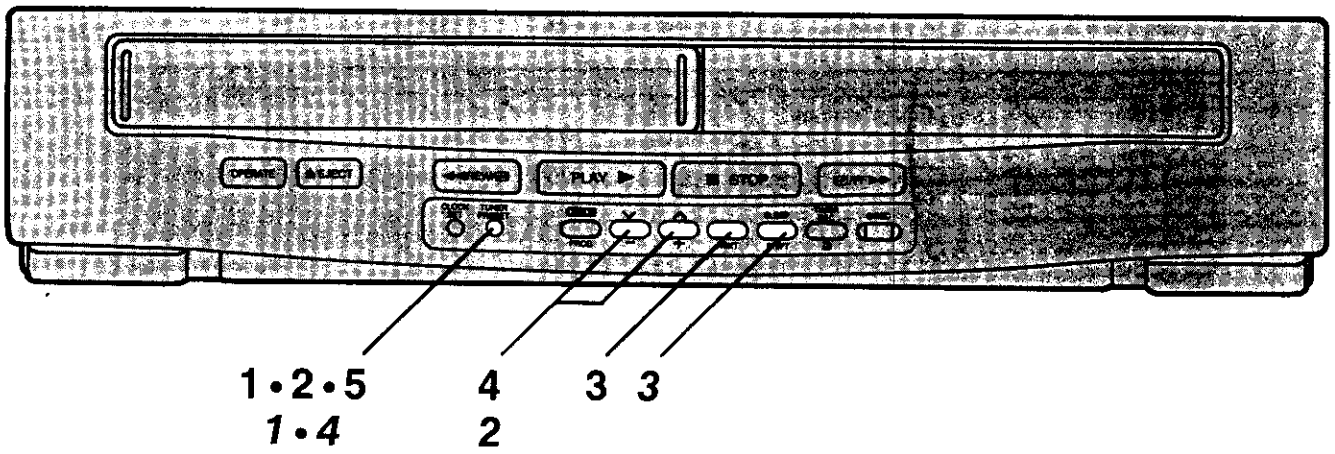
Introduction

The VTR is fitted with its own tuner (just like a normal TV set) and can be pre-set to receive up to 42 TV broadcast stations.

Preparation

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR and press **VTR/TV** to select the VTR mode.
- When selecting programme position do not select position "A1".

Operations	Display Symbols	
1		Keep **TUNER PRESET** pressed for more than 2 seconds.
2 		Press + or − to select the programme position, then press **NEXT**.
3 		Press + to select TV band "I", "III" or "U", then press **NEXT**.
4 		Search for the required TV station by pressing and holding + or −. Release once the station has been found. • Search speed changes quickly by pressing **SHIFT** simultaneously with + or −. • Press **NEXT** and repeat steps 2–4 for each programme position you want to tune to a station.
5		Press **TUNER PRESET** twice.



Fine Tuning Procedure

In poor reception areas, it may be possible to improve the picture quality by manually adjusting the tuning.

1 Keep **TUNER PRESET** pressed for more than 2 seconds, until the display changes.

2 Press **TUNER PRESET** again (briefly).

3 Press **NEXT**.

4 Press + or − to obtain the best tuning condition.
- "A" Indicator disappears.
- To return the tuning to its former state, press **SHIFT**.

5 Press **TUNER PRESET**.

Blanking of Unoccupied Programme Positions

You can blank programme positions that are not occupied with TV stations. They are then skipped during selection of the programme positions and allow faster programme selection with the ∨ and ∧ Buttons.

1 Keep **TUNER PRESET** pressed for more than 2 seconds, until the display changes.

2 Select a programme position which you do not want to tune to a TV station, by using + or −.

3 Press **SHIFT**. ("– –" is displayed.)
- Repeat steps 2 and 3 for other unoccupied programme positions to skip during the selection of the programme positions.
- To cancel the blanking of a programme position, select that programme position on the VTR and then press **SHIFT**.

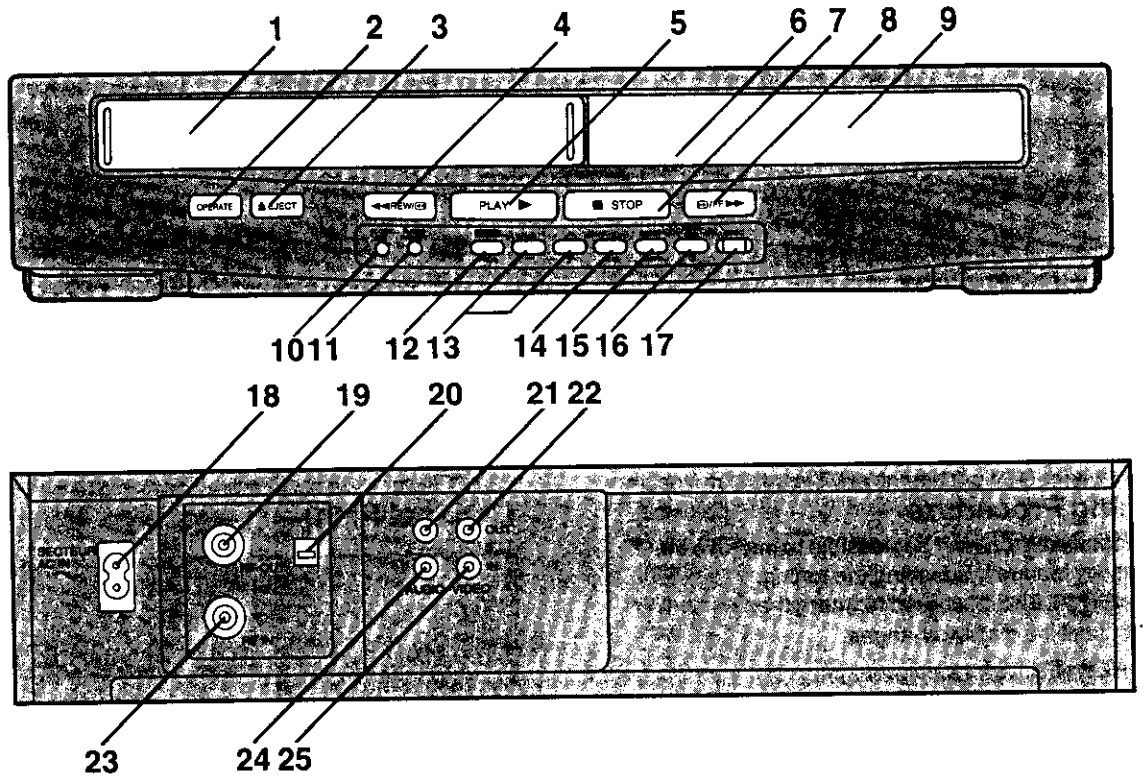
4 Press **TUNER PRESET** twice.

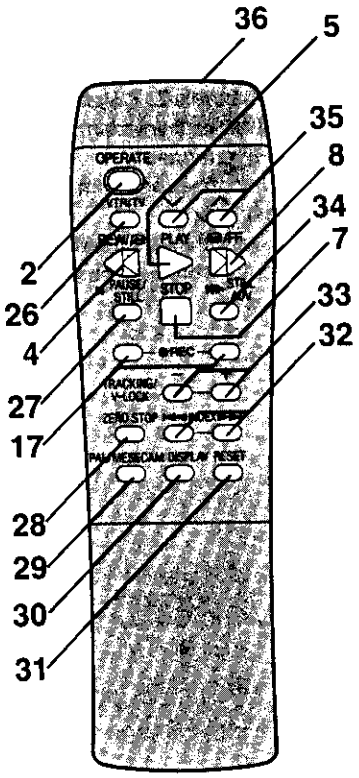
Channel Plan

	VHF		UHF
	I	III	U
NV-SD1A	0–5	5A–11	21–69
NV-SD1EA	1–3	4–11	21–69

PRE-PROGRAMMED TV CHANNELS (NV-SD1A)
The local TV transmission channels 2, 7, 9 and 10 are factory-preset in this VTR. That is, if you can receive television broadcasts on VHF channels 2, 7, 9 and 10, these are already tuned on the programme positions with the matching numbers.
However, it is possible to cancel these presettings and tune the local TV broadcast channels on any desired programme positions.
For alternative settings and tuning of additional TV broadcasts channels, follow the Tuning Operations.

Controls and Connection Sockets





This gives a detailed explanation of the function of each button, switch and connection socket.

1 Cassette Compartment
Insert a video cassette here.

2 OPERATE
To turn the VTR on and off.

3 EJECT
To eject a video cassette.

4 REW (REWIND)
In the stop mode: To rewind the tape.
In the playback mode: To search backward.
In the rewind mode: To obtain high speed picture.
"◁◁" is lit.

5 PLAY
To start playback. "▷" is lit.

6 Infra-red Remote Control Receiver Window

7 STOP
To stop any playback or recording.

8 FF (FAST FORWARD)
In the stop mode: To fast forward the tape.
In the playback mode:
To search forward.
In the fast forward mode:
To obtain high speed picture.
"▷▷" is lit.

9 Display

10 CLOCK SET (Refer to page 5.)
To set the time.

11 TUNER PRESET (Refer to page 6.)
To initiate TV station settings for the tuner.

12 CHECK/PROG (Refer to page 14.)
To select a timer programme number.
"P1, P2, P3... or P8" is lit.
To display details of preset timer recording in the timer standby mode.

13 ∨ ∧/− +
To select the required programme position (TV station).
To set the clock and timer recording.

14 NEXT
To proceed to the next item during setting procedures.

15 SLEEP/SHIFT
To set the time to turn off the VTR automatically. (Page 11)
To blank unoccupied programme positions. (Page 7)

16 TIMER REC (Refer to page 14.)
To turn the timer recording function on and off.
⏲ is lit or not lit.
The VTR can only be operated manually when the timer recording function is off.

17 REC (Refer to page 12.)
To start a recording.

18 AC IN~
To connect to the mains power supply.

19 RF OUT
To connect to the aerial terminal on a TV set.

20 Video Playback Channel Selector
To select the video playback channel.

21 AUDIO OUT
To connect an audio cable to a TV or another video recorder.

22 VIDEO OUT
To connect a video cable to a TV or another video recorder.

23 RF IN
To connect to the external aerial.

24 AUDIO IN
To connect an audio cable to a video camera or another video recorder.

25 VIDEO IN
To connect a video cable to a video camera or another video recorder.

26 VTR/TV
To select the VTR mode or TV mode.

27 PAUSE/STILL
During playback: Still picture.
During recording: To interrupt recording.

28 ZERO STOP (Refer to page 11.)
For the ZERO STOP function.

29 PAL/MESECAM
This function has been disabled on Australian and New Zealand models. It is available only on models not intended for use in Australia and New Zealand. Consequently, absence of function or effect of this button is NOT a malfunction or defect.

30 DISPLAY
To change the indication on the VTR Display.

Clock↔Counter

31 RESET
To reset the tape counter (elapsed time) to "0:00.00".
- The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

32 INDEX (Refer to page 16.)
For the index search function.

33 TRACKING/V-LOCK
For manual tracking adjustment;
The + and − buttons are used to adjust the tracking when, for example, noise bars on the picture are better removed manually than by the automatic digital tracking control. After making a manual adjustment, press both buttons together to return to automatic digital tracking control.

For vertical locking adjustment;
Use the + and − buttons to minimize any vertical jitter during still-picture playback.

34 STILL ADV
To advance a still picture during still playback.

35 Programme Position Selector Buttons
To select the programme positions.

36 Infra-red Transmitter

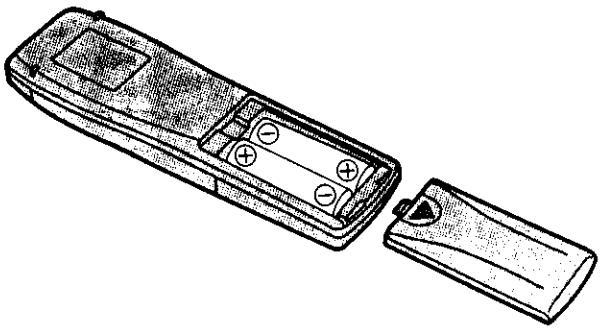
Power source for the remote controller

The remote controller is powered by 2 "UM3", "AA" or "R6" size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

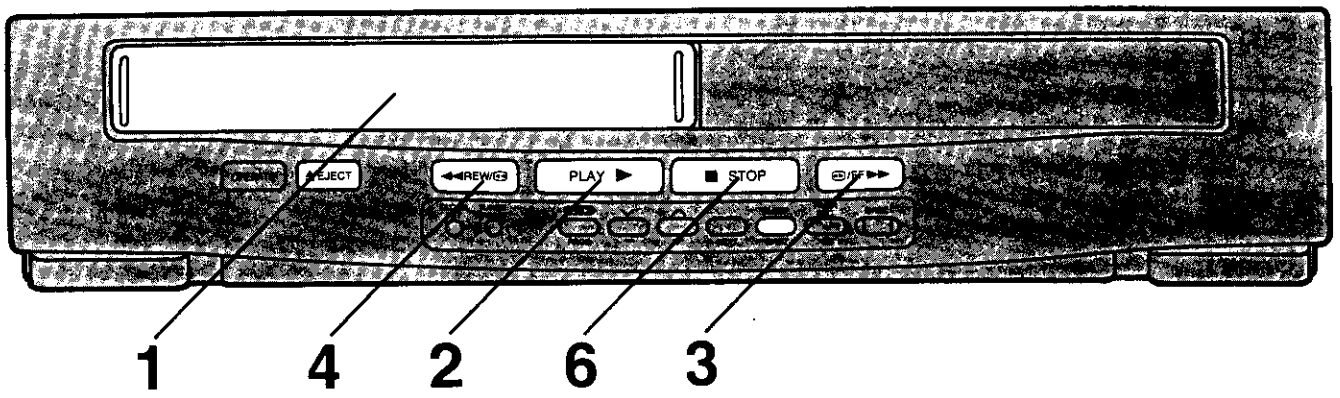
Precautions for battery replacement

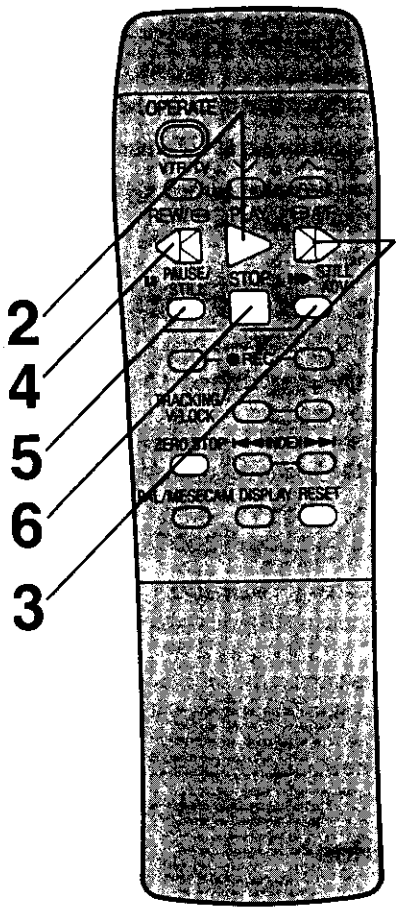
- Load new batteries with polarity (+ and −) aligned correctly.
- If you do not intend to use the remote for a long time, remove the batteries and store them in a cool and dry place.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.

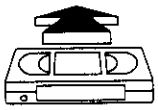
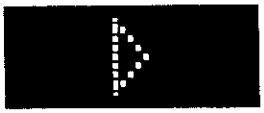
Loading the batteries



Playback





Operations	Display Symbols	
1 		Insert a recorded cassette tape.
2 PLAY		Start viewing the picture.
3 ⏩/FF		Search forward by tapping **FF**. ●To change back to normal playback, press **PLAY**.
4 REW/⏪		Search backward by tapping **REW**. ●To change back to normal playback, press **PLAY**.
5 ⏸ PAUSE/STILL ⏭ STILL ADV		View a still picture. ●To advance one frame of the still picture, press **STILL ADV**. ●To continue the normal playback, press **PLAY** or **PAUSE/STILL** again.
6 STOP		Stop viewing the picture.

Other Playback Functions

To obtain high speed picture during fast forward or rewind

Keep **FF** pressed during fast forward.
Keep **REW** pressed during rewind.

Note:
Cue or review playback will be automatically stopped after 10 minutes, and still playback after 5 minutes, to avoid damage to the VTR heads or the tape.

To return to a specified scene

1 Press **RESET** to set the counter to 0:00.00, while the tape is at the scene or position you wish to return to after playback.

2 After playback, press **STOP** to stop the tape.

3 The tape will be rewound or fast forwarded to 0:00.00 by now pressing **ZERO STOP**.

Automatic VTR off-time setting

Press **SLEEP** for the desired time.

- Each press gives a 30 minutes time span up to 9 hours.
- To cancel the setting time, press **SLEEP** repeatedly until 0:00 is set.

Other Automatic Functions

Automatic playback

When a cassette without an erasure prevention tab is inserted, the VTR starts playback automatically.

VTR-off playback

When the VTR is off, an inserted cassette can be played back by pressing **PLAY**; the VTR will turn on automatically.

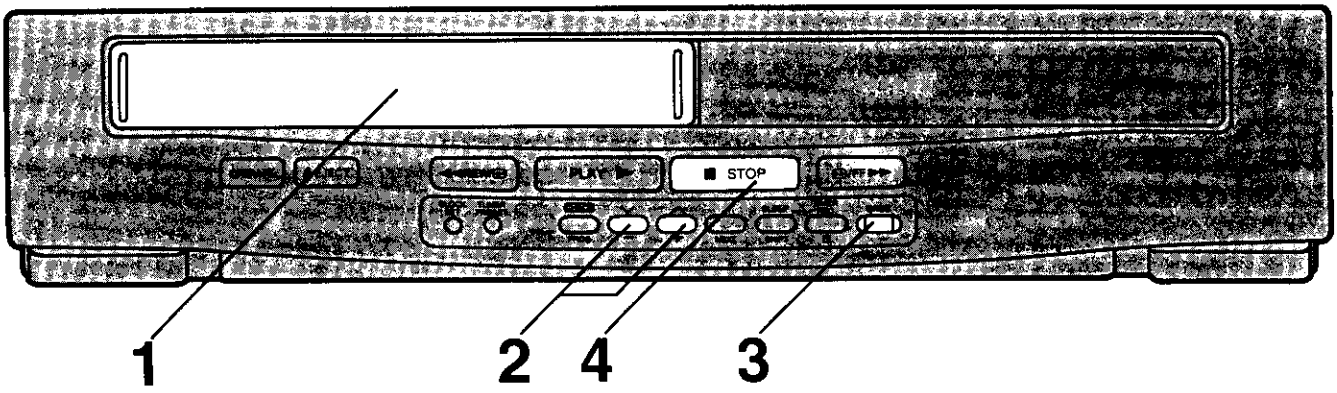
Automatic rewinding

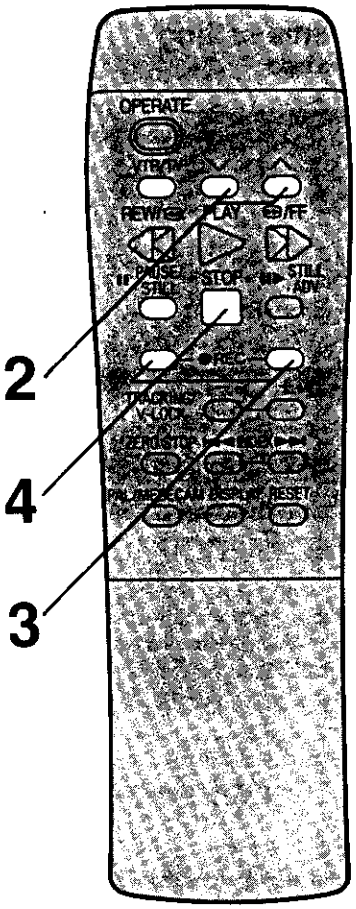
When the tape reaches its end during recording (except for timer recording) or playback, it will automatically be rewound to the beginning.

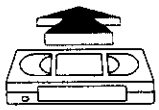
Automatic switching off and ejection

When the VTR is switched off, an inserted cassette can be ejected simply by pressing **EJECT**. The VTR will eject the cassette and automatically turn itself off again.

On-the-spot Recording





Operations	Display Symbols	
1 		Insert a cassette tape. ●If it has already been inserted, press **OPERATE** to turn the VTR on.
2		Select TV station.
3		Start recording.
4 STOP		Stop recording.

To interrupt recording

Press **PAUSE/STILL** during recording.
Press again to continue recording.

To record one TV programme while viewing another programme

1 Refer to the on-the-spot recording operations steps 1 to 3.

2 Press **VTR/TV** to select the TV mode.

3 Select the TV programme on your TV set you wish to view at the present time.

Notes:

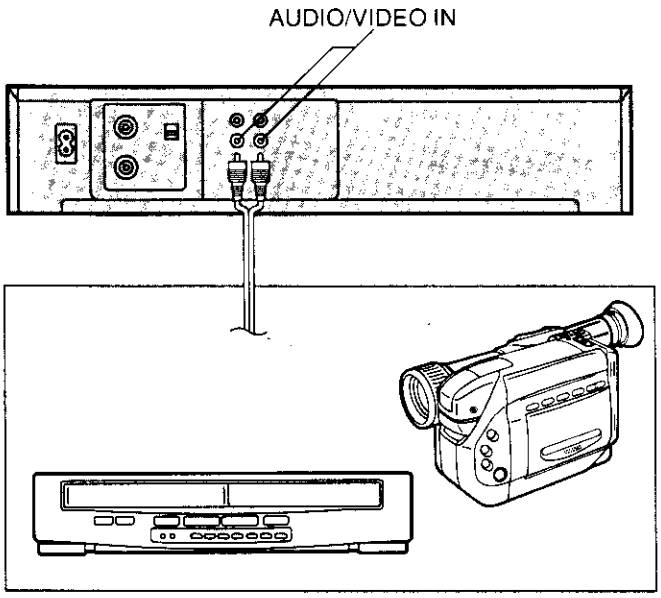
- When a video cassette with a broken off tab is inserted, the "" indication will flash to indicate that recording is not possible.
- The recording pause mode will be automatically released after 5 minutes.

Assembly Editing

This enables you to record a new segment immediately after a previously recorded segment.

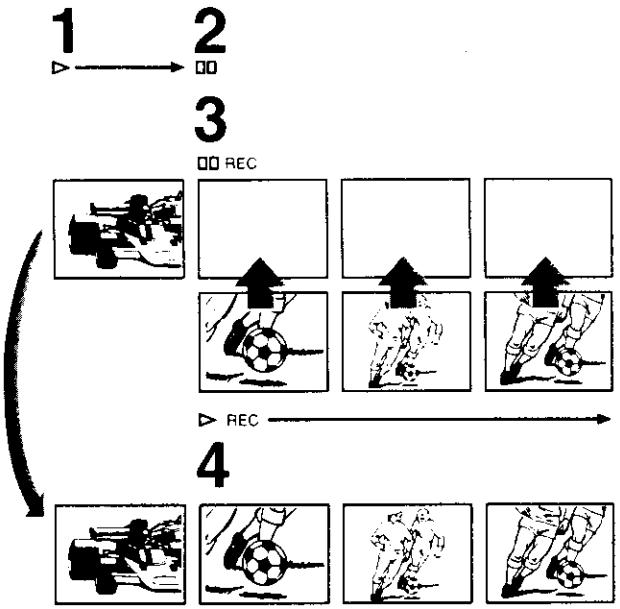
This function can be used to make up an edited tape from other recordings or video sources.

A new scene can be added to the end of a previous one.



Preparation

- Connect a movie camera or another VTR to this VTR as shown.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the video source required by pressing ∨ ∧ to set "A1" on the display.



Operations

1 Search for the end of the previous recording.

PLAY

2 Press **PAUSE/STILL** at the end point.

PAUSE/ STILL

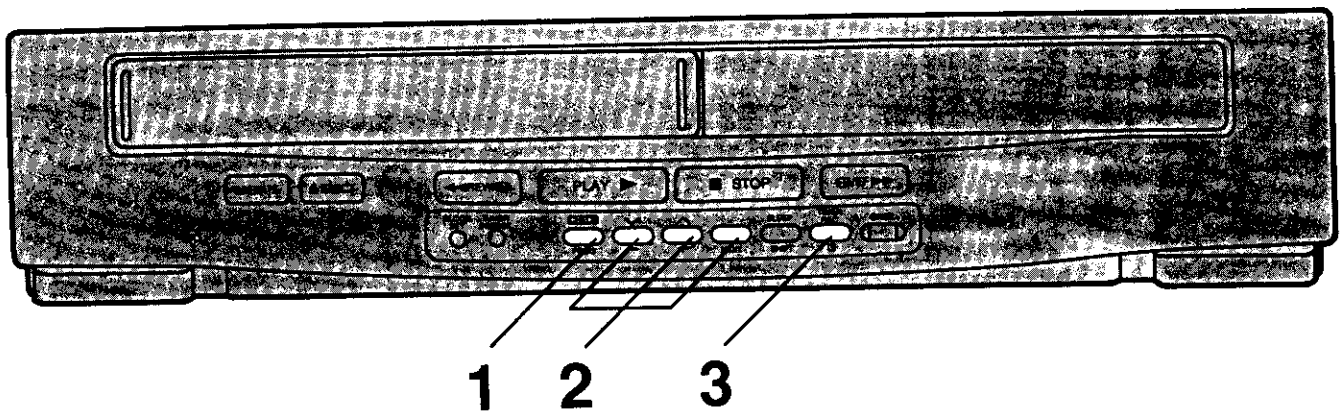
3 Set for the new recording by pressing **REC**.

REC

4 Start the new recording by pressing **PAUSE/STILL** again.

PAUSE/ STILL

Timer Recording



Up to 8 programmes can be recorded up to one month in advance by setting the timer.

Preparation

- Insert a cassette tape with an intact erasure prevention tab.

For Example:

Timer Programme number;	1
Programme position (channel);	2
Date;	27th, October
Starting time;	20:02
Ending time;	21:30
(present date;	16th October)

Operations	Display Symbols	
1 CHECK → PROG, NEXT		Select **Timer Programme number** "1", and then press **NEXT**. **P1** --------: When nothing is programmed **P1** : When something has already been programmed
2 Set each item by pressing + or − and **NEXT**.		
− +		Set **Programme position** (channel) "2".
		Set **Date** "27".
⬇		Set **Starting time** (hour) "20".
		Set **Starting time** (minute) "02".
NEXT		Set **Ending time** (hour) "21".
		Set **Ending time** (minute) "30". ● There is no need to press **NEXT**.
3 TIMER REC		To activate timer recording, press **TIMER REC**.

Timer Recording from External Signal Source

If Timer Recording is performed by a unit connected to the Audio/Video input sockets, select the A1 indicator for the programme position.

Setting other Programmes in Succession

Repeat steps 1 and 2.

Checking a Timer Programme in the timer standby mode

Select the timer programme number to be checked by pressing **CHECK/PROG**.

Cancelling a Timer Programme

1 Release from the standby mode by pressing **TIMER REC**.

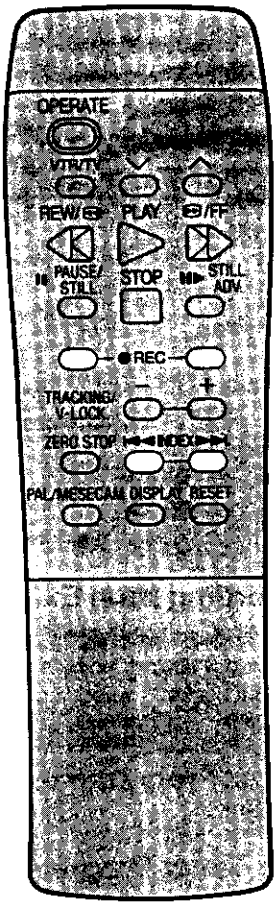
2 Select the timer programme number to be canceled by pressing **CHECK/PROG**.

3 Press + and − simultaneously for more than 3 seconds.

Search Function

VHS Index Search System

This system makes it very easy to find the beginning of each of several recording, because a special index signal is automatically recorded at the start of each recorded segment on the tape. Up to 20 index signals can be searched for in both directions.



Preparation

Insert a recorded cassette tape with recorded index signals.

For example:

Searching for the 2nd recorded segment in the forward direction.

Current tape position

(Start of) first segment forward

(Start of) second segment forward

Operations

Press **INDEX ▶▶I** twice.

Display Symbols

- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press **INDEX I◀◀**.

Recording Index Signals

Index signals are recorded in following cases.

- When a recording is started by pressing **REC**.
- When **REC** is pressed during recording.
- When timer recording is activated.

Note:

The search function can only work correctly, if the index signals are spaced at least 3 minutes apart.

Before Requesting Service

Before requesting service, check the following points once again.

VTR will not operate correctly			
SYMPTOM	**CAUSE**	**REMEDY**	**CHECKED**
VTR display is not illuminated.	Mains lead is not connected.	Reconnect mains lead to VTR.	
VTR display is illuminated but VTR will not operate when OPERATE is pressed.	VTR is in timer mode.	Press TIMER REC to operate VTR manually.	
	Safety devices are operating.	Disconnect mains lead and wait for 1 minute. Reconnect mains supply and check functions.	
VTR will operate for a few seconds then power off.	Tape is jammed in VTR.	If tape is jammed in VTR, do not attempt to remove, as this may cause damage. Consult your dealer for advice.	

Playback will not operate correctly			
SYMPTOM	**CAUSE**	**REMEDY**	**CHECKED**
Picture noisy or not in colour. Horizontal bars or lines run down the screen.	Tracking is not correct.	Although auto-tracking should ensure a good picture, it may be necessary to manually adjust tracking on some tapes not recorded on this VTR. See page 9.	
	TV set is not tuned to VTR.	Check TV tuning. See page 4.	
	Tape is recorded incorrectly.	Check that aerial is connected to VTR. See page 3.	
		Check that each programme position is tuned to the correct station. A snowy picture on one or more programmes may indicate that VTR is tuned to weak station or wrong transmitter. Re-tune if necessary. See page 6.	
	Condensation may have formed.	Do not operate VTR for 1 hour.	
	Tape defective due to surface damage or wear.	Confirm with another tape if noise free and replace the defective tape.	
VTR rewinds automatically during playback.	Tape end detector works during playback due to damaged tape.	Replace the defective tape.	

Recording will not operate correctly

SYMPTOM	CAUSE	REMEDY	CHECKED
"CC" indication flashes whenever recording is attempted.	Erasure prevention tab on cassette is broken off.	Use a tape with intact erasure prevention tab, or cover the tab hole with adhesive tape, if the original recording is no longer required.	
Picture is recorded with noise or blank screen.	Aerial or aerial lead is defective.	Check the aerial connection to the VTR. See page 3. Check your normal TV picture. If there is no picture, check your aerial.	
	VTR is not correctly tuned.	Re-tune the VTR. See page 6.	
	A1 is selected.	Select the required TV programme.	
Timer recording cannot be performed.	Clock or calendar is incorrectly set.	Check the clock and calendar. Set to the present time. (Note this is a 24 hour clock.) See page 5.	
	Clock is flashing 0:00.	Set the clock to the present time.	
	Recording start or stop time settings are incorrect.	Set the recording start and stop times correctly. Try a short timer recording a few minutes ahead of the present time to confirm correct operation. See page 14.	
	VTR is not set for timer recording.	Press TIMER REC after programming for timer recording.	
AV external recordings cannot be made.	A1 is not selected.	Select A1 (by pressing the ∧ or ∨ buttons).	
	External AV connections are incorrect.	Check that connections from the external video and audio source are correct. See page 13.	

Remote controller will not work correctly

SYMPTOM	CAUSE	REMEDY	CHECKED
Remote controller does not operate correctly.	Remote controller transmitter beam is not reaching VTR.	Ensure that remote controller is being pointed at the VTR and that the transmitter beam is not obstructed.	
	Distance is too far.	Use remote controller within 7 m of the VTR. If this range is not possible, replace the batteries.	
	Batteries are exhausted.	Replace batteries by the AA, UM3 or R6 type available from your dealer. Note precautions for replacement on page 9.	
	Batteries are incorrectly fitted with (+/−) reversed.	Fit batteries correctly as shown on page 9.	

Precautions

Please read these cautions before you operate this VTR.

Avoid Sudden Changes in Temperature

If the VTR is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the VTR. In this case, the Dew Indicator "$\dot{\delta}$" will flash on and off and the VTR will not operate.

Humidity and Dust

Avoid places where there is high humidity or much dust, which may cause damage to internal parts.

Do Not Obstruct the Ventilation Holes

The ventilation holes prevent abnormal increase in temperature. Do not block or cover these holes. Especially avoid covering the holes with soft materials such as cloth or paper.

Keep away from High Temperature

Keep the VTR away from extreme direct heat such as direct sunlight, heating radiators, or closed automobiles.

Keep Magnets away

Never bring a magnet or magnetized object near the VTR because it will adversely affect the performance of the VTR.

No Fingers or Other Objects Inside

Touching internal parts of this VTR is dangerous, and may cause serious damage to the VTR. Do not attempt to disassemble the VTR. There are no user serviceable parts inside.

Keep Water away

Keep the VTR away from flower vases, tubs, sinks, etc. CAUTION: If liquids are spilled into the VTR, serious damage could occur. If you spill any liquid into the VTR, consult qualified service personnel.

Lightning

To avoid damage by lightning, disconnect the aerial plug from the VTR.

Cleaning the VTR

Wipe the VTR with a clean, dry cloth. Never use cleaning fluid, or other chemicals. And do not use compressed air to remove dust.

Stacking

Place the VTR in a horizontal position, and do not place anything heavy on it.

Video Head Clogging

The video heads place picture signals on the tape during recording and read picture signals from the tape during playback and they are, therefore, of critical importance for the picture quality. If the VTR is used over extremely long periods of time, these heads may still become dirty and clogged. In such a case, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such a symptom case occurs have the recorder checked by qualified service personnel.

If Dew Condensation Forms in the VTR

Condensation may form in the VTR if:

- The VTR is in a room when the heater has just been turned on.
- The VTR is in a room with steam or high humidity.
- The VTR is brought from cold surroundings into a well-heated room.
- The VTR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

When dew forms in the VTR:

The Dew Indicator "$\dot{\delta}$" on the Multi-Function Display will flash on and off and all the function buttons are made non-operational to protect the tape and the video heads. When the Dew Indicator flashes, wait until this indicator disappears.

- If dew condensation forms inside the VTR while the OPERATE Switch is off, it will turn on automatically and the Dew Indicator will flash on and off. As soon as the dew condensation has been dissolved, the VTR will turn itself off again.

Specifications

NV-SD1A, EA

Information for Your Safety

Power Source:	NV-SD1A; 240 V AC 50–60 Hz NV-SD1EA; 230 V AC 50–60 Hz		
Power Consumption:	Approx. 21 watts		
Video Recording System:	2 rotary heads, helical scanning system		
Video Heads:	2 heads		
Tape Speed:	23.39 mm/sec.		
Tape Format:	VHS tape		
Record/Playback Time:	240 min. with NV-E240		
VIDEO			
Television System:	CCIR; 625 lines, 50 fields, PAL colour signal		
Modulation System:	Luminance; FM azimuth recording Colour signal; converted subcarrier phase shift recording		
Input Level:	VIDEO IN (PHONO);	1.0 Vp-p,	75 ohm
Output Level:	VIDEO OUT (PHONO);	1.0 Vp-p,	75 ohm
	RF Modulated; NV-SD1A:	VHF channel 0 or 1,	75 ohm
	NV-SD1EA:	VHF channel 2 or 3,	75 ohm
AUDIO			
Input Level:	AUDIO IN (PHONO);	more than −10 dBV,	more than 50 kohm
Output Level:	AUDIO OUT (PHONO);	−6 dBV,	1 kohm
Audio Track:	1 track (Normal-mono only)		
Video Horizontal Resolution:	Colour; more than 240 lines		
Signal-to-Noise Ratio:	Video; more than 43 dB Audio; more than 43 dB		
Audio Frequency Response:	80 Hz–10 kHz		
Operating Temperature:	5°C–40°C		
Operating Humidity:	35%–80%		
Weight:	4.3 kg		
Dimensions:	430 (W)×91 (H)×273 (D) mm		
Standard Accessories:	1 pc. DIN-DIN Coaxial Cable 1 pc. Remote Controller 2 pcs. "R6" "AA" size batteries 1 pc. AC Mains Lead		

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan